

PI Kuen B, Lubitz W, Sleytr U;
XX WPI; 1997-394558/37.
XX
PT Preparation of S-layer proteins by expressing sbs-A gene in Gram
PT negative bacterium - or new sbs-B gene in any host, also new
PT recombinant proteins containing heterologous inserts, e.g.
PT epitope(s), useful as vaccines and adjuvants
XX
XX
P5 Claim 1; Pages 9-14; 31pp; German.
XX
CC The present sequence encodes the Bacillus stearothermophilus PV72
CC S-layer protein, sbs-A. S-layer structures can be used as vaccines
CC or adjuvants, particularly when they include a bacterial ghost that
CC may contain additional epitopes in its membrane. Other uses of
CC recombinant sbs-A, depending on the nature of the inserted peptide,
CC are as an universal carrier for biotinylated reactants for use in
CC immunological or hybridisation assays (the insert is streptavidin),
CC to induce immune responses (epitopes), as a reagent for removing
CC cyclase or toxin from serum (antigenic epitopes), as a molecular
CC spinning nozzle (polyhydroxybutyrate synthase) and as a molecular
CC laser (luciferase).
XX
SQ Sequence 3687 BP; 1316 A; 660 C; 715 G; 996 T; 0 other;

Query Match 100.0%; Score 3687; DB 18; Length 3687;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 3687; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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RESULT 2
AAK22748
ID AAK22748 Standard; DNA; 3687 BP.
XX
AC AAK22748;
XX
DT 24-AUG-1999 (first entry)
XX
DE B steatothermophilus sbas DNA.
XX
KW sbas protein; S-layer protein; Gram-negative; prokaryotic host cell;
KW integration; cytoplasmic membrane; secretion; periplasmic space; toxin;
KW eukaryotic host cell; vaccine; adjuvant; immunogenic epitope; luciferase;

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RESULT 3

AAA71797
ID AAA71797 standard; DNA; 3687 BP.

AC AAA71797;

XX 08-JAN-2001 (first entry)

DE B. steatothermophilus sbsa DNA.

XX S-layer gene; sbsA; antibacterial; vaccine; adjuvant; bioreactor;

KM polyhydroxyalkanoate synthesis; ds.

XX Bacillus steatothermophilus.

XX Key Location/Qualifiers

FT CDS 1..3687

FT sig_peptide /*tag-2 "sbsA"

FT mat_peptide /*tag-b 94..3684

FT /*tag-c

XX DEL9903345-A1.

XX 03-AUG-2000.

XX 28-JAN-1999; 99DE-1003345.

XX 28-JAN-1999; 99DE-1003345.

XX (LUBI/) LUBITZ W.

XX LUBITZ W;

XX WPT: 2000-533868/45.

XX P-PSDB: AAB10625.

XX Host cell, useful e.g. as bioreactor for production of

XX poly(hydroxyalkanoate), containing two or more recombinant

XX polypeptides, with at least one in carrier-bound form -

XX Disclosure; Page 8-12; 26pp; German.

CC This invention describes a novel host cell (A) comprising at least two

CC functional recombinant polypeptides (I), at least one being in carrier

CC bound form. The products of the invention have antibacterial activity.

CC (A), or, where bacterial, their ghosts (B), are useful as vaccines or
 CC adjuvants (specifically for presentation of immunogenic epitopes of
 CC pathogens or autologous immunostimulatory polypeptides, e.g. cytokines),
 CC or preferably, as enzyme reactors for performing a cascade of reactions,
 CC specifically synthesis of poly(hydroxyalkanoate). Localization of
 CC individual (I), specifically enzymes, in separate cellular compartments
 CC avoids adverse reactions between products and substrates, when being used
 CC as bioreactors. (I) can be produced in carrier-bound form without loss of
 CC function. This sequence encodes the bacillus steatothermophilus S-layer
 CC protein sbsA which is used to illustrate the method of the invention.
 XX

Sequence 3687 BP; 1316 A; 660 C; 715 G; 996 T; 0 other;

Query Match 100.0%; Score 3687; DB 21; Length 3687;
 Best Local Similarity 100.0%; Pred. No. 0;
 Matches 3687; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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 2797 gttgataccaatgaacatgattagcggagagtaaacctggagaaacatgctgttaagat 2856
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 2821 gcaagcaggtaatgcytgtagctgtgactgtaacagcactgtaacggttcttaacaataatt 2880
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 2857 ggaagcaggtaatgcytgtagctgtgactgtaacagcactgtaacggttcttaacaataatt 2916
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 2881 gttatccctccatcccaagaatlaaagctgtgtacagtttactctgttaacaattgacggt 2940
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 2917 gttatccctccatcccaagaatlaaagctgtgtacagtttactctgttaacaattgacggt 2976
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 2941 gttgagagataagtaggtgtaacacatctcttaatactattctgttcaagacttatact 3000
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 2977 gttgagagataagtaggtgtaacacatctcttaatactattctgttcaagacttatact 3036
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 3001 gctgaatccaacgctatcctcaatccagcatgtgtagcagtgccagtttaacgcttgaccggtct 3060
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 3037 gctgaatccaacgctatcctcaatccagcatgtgtagcagtgccagtttaacgcttgaccggtct 3096
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 3061 aaacaatlaacatgtaatacggatccgagttccaaacccaacatccctttaagaag 3120
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 3097 aaacaatlaacatgtaatacggatccgagttccaaacccaacatccctttaagaag 3156
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 3121 gctgcgcgaactcttaatacttaatacttaatacttaatacttaatacttaatacttaatact 3180
 |||||||
 3157 gctgcgcgaactcttaatacttaatacttaatacttaatacttaatacttaatacttaatact 3216
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 3181 tacaacaatgttatccacaagaagtgtaaacacttgacgagtttactcaatagatgtagca 3240
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 3217 tacaacaatgttatccacaagaagtgtaaacacttgacgagtttactcaatagatgtagca 3276
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 3241 gtttcaaaaagatttccaactgtgtacgtagattgtagaagaatttacttacttcaacaggt 3300
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 3277 gtttcaaaaagatttccaactgtgtacgtagattgtagaagaatttacttacttcaacaggt 3336
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 3301 tctgttgcctacgacgaagtaaaacctgctctagtagcgtgtgttcaatgagatggaaca 3360
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 3337 tctgttgcctacgacgaagtaaaacctgctctagtagcgtgtgttcaatgagatggaaca 3396
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 3397 agctatactcaagatgctgacgaacacacgactcgtctgttagcgtgtgttcaatgagatgga 3456
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 3421 ccagttgccttcaatcttccagaagaatgtagtttaacgaatgacacactgtgcaatlaaca 3480
 |||||||
 3457 ccagttgccttcaatcttccagaagaatgtagtttaacgaatgacacactgtgcaatlaaca 3516
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 3481 aatattactgtagtaaaacgtgtgaagttatttcaaaagagagtgtagacacacat 3540
 |||||||
 3517 aatattactgtagtaaaacgtgtgaagttatttcaaaagagagtgtagacacacat 3576
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 3541 gatgagagtgctactcaaaagagacatgatttaatacaacagttaccctttagatttgaat 3600
 |||||||
 3577 gatgagagtgctactcaaaagagacatgatttaatacaacagttaccctttagatttgaat 3636
 |||||||
 3601 aacagcagacttacaagattgttgaagtgagtgtaaaagatgacgaggaattttga 3660
 |||||||
 3637 aacagcagacttacaagattgttgaagtgagtgtaaaagatgacgaggaattttga 3696
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 3661 gatactatlaacttataatagaaca 3687
 |||||||
 3697 gatactatlaacttataatagaaca 3723
 |||||||

RESULT 5
 AAX78246
 ID AAX78246 standard; DNA; 3768 BP.
 XX
 AC AAX78246,
 XX
 DT 24-MUG-1999 (first entry)
 XX
 DE B. stearothermophilus sbSA/Bacteriophage fd Gene 3 fusion protein DNA.
 XX
 KM sbSA protein; S-layer protein; Gram-negative; prokaryotic host cell;
 KM integration; cytoplasmic membrane; secretion; periplasmic space; toxin;
 KM eukaryotic host cell; vaccine; adjuvant; immunogenic epitope; luciferase;
 KM immunostimulant; cytokine; polyhydroxybutyrate; PHB synthase; body fluid;
 KM molecular laser; universal carrier molecule; monomolecular layer; Gene 3;
 KM fusion gene; ds.
 XX
 OS Synthetic.
 OS Bacteriophage fd.
 OS Bacillus stearothermophilus
 XX
 PN DE19732829-A1.
 XX
 PD 04-FEB-1999.
 XX
 PE 30-JUL-1997; 97DE-1032829.
 XX
 PF 30-JUL-1997; 97DE-1032829.
 XX
 PR 30-JUL-1997; 97DE-1032829.
 XX
 PA (LUBITZ/) LUBITZ W.
 XX
 PI Lubitz W., Resch S;
 XX
 DR WPI: 1999-122189/11.
 XX
 XX Producing S-layer proteins in Gram-negative bacteria or eukaryotes -
 PT integrated into membranes or organelles or secreted into periplasm
 PT or growth medium, and nucleic acid encoding S-layer proteins with
 PT peptide insertions, used in vaccines or for enzymatic reactions
 XX
 PS Example 8; Fig 5; 34pp; German.
 XX
 CC This invention describes a method for the production of a S-layer protein
 CC (I) which comprises (a) preparing a Gram-negative prokaryotic host cell
 CC transformed with nucleic acid (II) encoding (I), linked to a signal
 CC sequence (SS) that encodes a protein which causes at least one of (i)
 CC integration of (I) into the external or cytoplasmic membranes and/or
 CC (ii) secretion of (I) into the periplasmic space or extracellular medium,
 CC (b) culturing the cell to express (I) and (c) optionally recovering (I)
 CC from the membranes, periplasmic space and/or extracellular medium.
 CC Alternatively, a eukaryotic cell is used as host and then the SS, which
 CC is optional, promotes integration into the cytoplasmic membrane or an
 CC organelle and/or secretion into the extracellular medium. (I), and
 CC derived structures, may include a wide variety of polypeptide inserts and
 CC are useful as (i) vaccines or adjuvants (with immunogenic epitopes or
 CC immunostimulants inserts such as cytokines) (ii) as reactors (inserts
 CC are enzymes, e.g. polyhydroxybutyrate (PHB) synthase for use as a
 CC 'molecular spinnerette' for production of PHB or luciferase for use as
 CC molecular laser (when combined with substrate and oxygen) and (iii) as
 CC universal carrier molecule (streptavidin is inserted) for use in
 CC hybridisation and immuno assays, or for selective elimination of
 CC cytokines, toxins etc. from body fluids (inserts are specific binding
 CC epitopes). In this system, heterologous (I) do not form inclusion bodies
 CC but rather monomolecular layers, and in eukaryotic cells they undergo
 CC glycosylation. This sequence encodes a fusion gene constructed from the
 CC Bacillus stearothermophilus sbSA gene and the Bacteriophage fd Gene 3
 CC signal sequence which is used in the method of the invention.
 XX
 SO Sequence 3768 BP; 1320 A; 683 C; 733 G; 1032 T; 0 other;

Query Match 97.6%; Score 3597.4; DB 20; Length 3768;
 Best Local Similarity 99.3%; Pred. No. 0;

Matches 3613; Conservative 0; Mismatches 26; Indels 0; Gaps 0;			
QY	49	gcaagtcgatttgcgtcgcaatcccaacgcttcgaaacggtctacagatgtagcaaca	108
Db	19	gcaattcccttggttgtctctctctatgctggccacgcggcgtctaaagctgtgcacaca	78
QY	109	gtagtaagccaagcaaaagcacaagcttccaaaaagcatactatacttacaacatcacgta	168
Db	79	gtatagccaagcacaagacagcttccaaaaagcatactatacttccagccatacagta	138
QY	169	acggaaacctggtgaaattcccaaacatlaacgtagtatagtctgatatcaacaacgcaaa	228
Db	139	acggaaacctggtgaaattcccaaacatlaacgtagtatagtctgatatcaacaacgcaaa	198
QY	229	aaacgatacgtatgctgtagcattagtgataaagcaggtggcgggaaaaaagagagct	288
Db	199	aaacgatacgtatgctgtagcattagtgataaagcaggtggcgggaaaaaagagagct	258
QY	289	tacttgcgtatctacaacaaagatatgaaacttaacgtcttccaagcacaacccaattct	348
Db	259	tacttgcgtatctacaacaaagatatgaaacttaacgtcttccaagcacaacccaattct	318
QY	349	ggcgaaagctcgtgtagcaactacatcagatgcttacaacatgtaacacaaaattagacgaa	408
Db	319	ggcgaaagctcgtgtagcaactacatcagatgcttacaacatgtaacacaaaattagacgaa	378
QY	409	atggcgcaagagatlaagatgctgtgttcaagcacaagatttagaaaaaagagaacaatac	468
Db	379	atggcgcaagagatlaagatgctgtgttcaagcacaagatttagaaaaaagagaacaatac	438
QY	469	tatcacaaaattctctatgaaattaaactcgacagctcatcttagatctgcatatggt	528
Db	439	tatcacaaaattctctatgaaattaaactcgacagctcatcttagatctgcatatggt	498
QY	529	aaaaacaactcgtgatttacttcgctctacaattlaaagcacaagcacaagaacttcgcgac	588
Db	499	aaaaacaactcgtgatttacttcgctctacaattlaaagcacaagcacaagaacttcgcgac	558
QY	589	agcttaattatgatatcttaccgttgcattgaaagcgcgcgaagtacaaagcgtctgtgaaa	648
Db	559	agcttaattatgatatcttaccgttgcattgaaagcgcgcgaagtacaaagcgtctgtgaaa	618
QY	649	gcagcgcaatttagacaagaactlaaagctgctgtgatacaaatccatcattaccacaaa	708
Db	619	gcagcgcaatttagacaagaactlaaagctgctgtgatacaaatccatcattaccacaaa	678
QY	709	gtaacagatgcttccaaactctgaactlaacagaagtagcgaaaaaagcatatagatgcgat	768
Db	679	gtaacagatgcttccaaactctgaactlaacagaagtagcgaaaaaagcatatagatgcgat	738
QY	769	gaagctgcgcttacttccaaaagtgtgaaagtgttaagtgcgatttaacactcaaaaacaaagt	828
Db	739	gaagctgcgcttacttccaaaagtgtgaaagtgttaagtgcgatttaacactcaaaaacaaagt	798
QY	829	gttgaatataacgcagtagacagtgaaacgcgaactaaattacaactttagagctgcga	888
Db	799	gttgaatataacgcagtagacagtgaaacgcgaactaaattacaactttagagctgcga	858
QY	889	aattgaaatatacgtlaaactgtaactgtacgtatcatataaagtgtgacggtlaaacatcca	948
Db	859	aattgaaatatacgtlaaactgtaactgtacgtatcatataaagtgtgacggtlaaacatcca	918
QY	949	tttgcgccttaataacgcagaaagtgttcttatactacagaaacggaanaacttaccactggtgat	1008
Db	919	tttgcgccttaataacgcagaaagtgttcttatactacagaaacggaanaacttaccactggtgat	978
QY	1009	gcttcaactcgaattcgaaataaatacagagataaagtagtagttaaaggtattaaagac	1068
Db	979	gcttcaactcgaattcgaaataaatacagagataaagtagtagttaaaggtattaaagac	1038
QY	1069	aaaatgycaaagaaatttaagaagaatgcatcacttcaagcttcgaaatgtactgta	1128
Db	1039	aaaatgycaaagaaatttaagaagaatgcatcacttcaagcttcgaaatgtactgctgta	1098

QY 2209 gcaactaatatatacatatcatatctacaactgaaagctcaagacgttaacagcaacaacggtt 2268
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Db 2179 gaactaaactatatacatatacattacaaactgaaagctcaagacgttaacagcaacaacggtt 2238
QY 2265 acaaaagctatccaaggtgtaattctttaaaagacgtctgatactcacttaacgaac 2328
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Db 2239 acaaaagctatccaaggtgtaattctttaaaagacgtctgatactcacttaacgaac 2298
QY 2329 gctgctgcaggtgcacaaatctcaactccaatttaaggaattaaatctcttaagtct 2388
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Db 2299 gctgctgcaggtgcacaaatctcaactccaatttaaggaattaaatctcttaagtct 2358
QY 2389 tctttagtggtgagcaagtaactctgcaggaattaaacaacaacgagatcggttagatgct 2448
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Db 2359 tctttagtggtgagcaagtaactctgcaggaattaaacaacaacgagatcggttagatgct 2418
QY 2449 ggtactggaacaacactgtatcagttgctctctaagacagatgcaaatggttaagaagct 2508
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Db 2419 ggtactggaacaacactgtatcagttgctctctaagacagatgcaaatggttaagaagct 2478
QY 2509 gctgctgctacataaactggtctctgcaataacgacaagaatgagcaactgctgtgta 2568
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Db 2479 gctgctgctacataaactggtctctgcaataacgacaagaatgagcaactgctgtgta 2538
QY 2569 gtagataagctctcacaatgagatcggaatcgctgagatgtagctgtaattgaagaagaaa 2628
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Db 2539 gtagataagctctcacaatgagatcggaatcgctgagatgtagctgtaattgaagaagaaa 2598
QY 2629 gatatttaattcgttaacaacagctgagacaacaactgagctctctgtaagaagctgctgt 2688
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Db 2599 gatatttaattcgttaacaacagctgagacaacaactgagctctctgtaagaagctgctgt 2658
QY 2689 gacaaagatggticaaaaacgctctcgtgcatctccacaacaagcctgcaattgatacaact 2748
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Db 2659 gacaaagatggticaaaaacgctctcgtgcatctccacaacaagcctgcaattgatacaact 2718
QY 2749 aagagctctcttctgtgaattcaatgaaactgtatttagcggaagttaaacctgagaacatc 2808
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Db 2719 aagagctctcttctgtgaattcaatgaaactgtatttagcggaagttaaacctgagaacatc 2778
QY 2809 gctgttaagaatgagcaagcaagtaactgagctgagctgtaacagcattagacggttct 2868
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Db 2779 gctgttaagaatgagcaagcaagtaactgagctgagctgtaacagcattagacggttct 2838
QY 2869 acaaatkaattgtatctcatctccatctcaagaaattaaagaactggttaactctgta 2928
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Db 2839 acaaatkaattgtatctcatctccatctcaagaaattaaagaactggttaactctgta 2898
QY 2929 acaattgacggtgctgagagaataaagttaacacacatctcttaataatactactcgttc 2988
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Db 2899 acaattgacggtgctgagagaataaagttaacacacatctcttaataatactactcgttc 2958
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Db 2959 aagactgtatctgcggaatcacaacgttatcttaataagactgctgacggttcaggttaac 3018
QY 3049 gctgacggttctcaaaacaattcaaatgtgaattcagcgatctcaagttccaaacccaacaatc 3108
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Db 3019 gctgacggttctcaaaacaattcaaatgtgaattcagcgatctcaagttccaaacccaacaatc 3078
QY 3109 actcttaagaagctgagacggaactcaattacttaacttaacatttagtaaatgtaaat 3168
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Db 3079 actcttaagaagctgagacggaactcaattacttaacttaacatttagtaaatgtaaat 3138
QY 3169 gaaataaagaatcaaaatgtattccaaagaagtgtaacactgtgacaggtttactca 3228
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Db 3139 gaaataaagaatcaaaatgtattccaaagaagtgtaacactgtgacaggtttactca 3198
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Db 3499 gacgcagacacatgagatgctgctactaaggaacttggtatataacaggttactct 3558
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Db 3559 ttagtactgtataacagcagaactataaagattggttaagtgtgaagtgtaagaatgacga 3618
QY 3649 ggtaatgttgcagatactattacattctatataagtaa 3687
|||||
Db 3619 ggtaatgttgcagatactattacattctatataagtaa 3657

RESULT 6
AAx78245
ID AAx78245 standard; DNA; 4988 BP.
XX
AC AAx78245;
XX
DT 24-AUG-1999 (first entry)
XX
DE B. stearothermophilus sbxA/male fusion protein DNA sequence.
XX
XX sbxA protein; S-layer protein; Gram-negative; prokaryotic host cell;
KW integration; cytoplasmic membrane; secretion; periplasmic space; toxin;
KW eukaryotic host cell; vaccine; adjuvant; immunogenic epitope; luciferase;
KW immunostimulant; cytokine; polyhydroxybutyrate; PHB synthase; body fluid;
KW molecular laser; universal carrier molecule; monomolecular layer;
KW fusion protein; male; ss.
XX
OS Synthetic.
OS Bacillus stearothermophilus.
XX
PN DE19732829-A1.
XX
PD 04-FEB-1999.
XX
PE 30-JUL-1997; 97DE-1032829.
XX
PR 30-JUL-1997; 97DE-1032829.
XX
PA (LUBITZ) LUBITZ W.
XX
PI Lubitz W, Resch S;
XX
DR WPI; 1999-122189/11.
XX
XX
XX Producing S-layer proteins in Gram-negative bacteria or eukaryotes -
PT integrated into membranes or organelles or secreted into periplasma
PT or growth medium, and nucleic acid encoding S-layer proteins with
PT peptide insertions, used in vaccines or for enzymatic reactions
XX
XX Example 7; Fig 4; 34pp; German.
XX
XX This invention describes a method for the production of a S-layer protein
CC (I) which comprises (a) preparing a Gram-negative prokaryotic host cell
CC transformed with nucleic acid (II) encoding (I), linked to a signal
CC sequence (SS) that encodes a protein which causes at least one of (i)

Dh	4069	aaagctgttaacagttcttactctctgttaaacatctgaacgggtgtgtgagatataangttaaaca	4122
Qy	2965	atctctaaataacatctactctgttccaagactgtatctcgtgaatccaaagcttatcttcaac	3024
Dh	4139	atctctaaataacatctactctgttccaagactgtatctcgtgaatccaaagcttatcttcaac	4186
Qy	3025	agccttctgttcggttgcagtttaaaagtttgaacccgtttcaaaaacattcaattgaattccgc	3088
Dh	4189	agccttctgttcggttgcagtttaaaagtttgaacccgtttcaaaaacattcaattgaattccgc	4248
Qy	3085	gattcaagcttccaaccccacaacatcaactcttaagaagagcttgaacgaattcatcttactat	3144
Dh	4249	gattcaagcttccaaccccacaacatcaactcttaagaagagcttgaacgaattcatcttactat	4300
Qy	3145	tacactttagtaaaagttaaaataatgaaataataacaatacaaatgttatctccaagaagt	3204
Dh	4309	tacactttagtaaaagttaaaataatgaaataataacaatacaaatgttatctccaagaagt	4366
Qy	3205	gttaaaccttgcacgggtttactcaatataggttttagcaggtttcaaaaagattttcaaacctgtc	3266
Dh	4369	gttaaaccttgcacgggtttactcaatataggttttagcaggtttcaaaaagattttcaaacctgtc	4422
Qy	3265	actgattatttgaatacaaaagttatcaattatcaacaggttttcgtttctactctgtgaacgaataaa	3322
Dh	4429	actgattatttgaatacaaaagttatcaattatcaacaggttttcgtttctactctgtgaacgaataaa	4488
Qy	3325	ctgtctctagtaagcgttctgttctcatatgaaatgaaacaaagcttatcaatgaattgttcagca	3384
Dh	4489	ctgtctctagtaagcgttctgttctcatatgaaatgaaacaaagcttatcaatgaattgttcagca	4544
Qy	3385	acacagactccggtctgtgagctgacacttcgttcgagagccagttgtcccttcaattctcagaa	3444
Dh	4549	acacagactccggtctgtgagctgacacttcgttcgagagccagttgtcccttcaattctcagaa	4606
Qy	3445	ggtatcagtttaaaagaaatgcacactgtgtgacagctgaaccaaatatctactgtatataaacctgtt	3500
Dh	4609	ggtatcagtttaaaagaaatgcacactgtgtgacagctgaaccaaatatctactgtatataaacctgtt	4666
Qy	3505	gaagttatttcaaaaagagatgttgaagaagcagacataatgataaggtgtctataagagagca	3564
Dh	4669	gaagttatttcaaaaagagatgttgaagaagcagacataatgataaggtgtctataagagagca	4722
Qy	3565	ttaagtaattaaacaaagttaactccttcttgaattctgtataacagcagaagactataagaattgtt	3624
Dh	4729	ttaagtaattaaacaaagttaactccttcttgaattctgtataacagcagaagactataagaattgtt	4788
Qy	3625	gttaagttgagtttaagaatgtcagcagaagtaattgttgcagaatactatacttcaattctaatag	3688
Dh	4789	gttaagttgagtttaagaatgtcagcagaagtaattgttgcagaatactatacttcaattctaatag	4848
Qy	3685	taa 3687	
Dh	4849	taa 4851	
RESULT 7			
AAFS8252			
ID	AAFS8252 standard; DNA; 936 BP.		
AC	AAFS8252:		
XX			
DT	24-APR-2001 (first entry)		
XX			
D2	Oligonucleotide D1835.		
XX			
KM	Electron-transfer group; EFM: mismatch; genotyping;		
XX	gene expression; ss.		
OS	Synthetic.		
XX			
PN	W0200107665-A2.		
XX			
PD	01-FEB-2001		


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QY 1140 gtttgaactaatgtaaacaacactctctglaaacttagcgagctacttgagac 1199
DB 124 www. .... 183
QY 1200 tgaagactactlaacagctgatttgaagtgttagacactgaacgtlaaacgctc 1259
DB 184 www. .... 243
QY 1260 gaacgtactatctacagatgtgaaactgaaacgactccaglaattgcctactc 1319
DB 244 www. .... 303
QY 1320 tggctacaactactactacgtlaaaagagcgttagtaactggtgaacaataaact 1379
DB 304 www. .... 363
QY 1380 tgcctacaataatgtlaaaacattaaactgtgtacaaagcgtacgaattagtgct 1439
DB 364 www. .... 423
QY 1440 cactgcacaacgacatccgacacatgctgctacacgtctactacttggtgtgtaaac 1499
DB 424 www. .... 483
QY 1500 ttatctactggtctctctacaaacaaatgttgggtaattggtggtgtgtaatga 1559
DB 484 www. .... 543
QY 1560 agctggaactattatctctgctctcaatctcaacaacgcttgctactaagttaga 1619
DB 544 www. .... 603
QY 1620 actacttagctgataacttgctgtaactgtaaaaagatcgtgtacagcttgctgctc 1679
DB 604 www. .... 663
QY 1680 tgaactaaataatgacagcgtctaaatggtlaacttagtgcacaaagcgtgaactaa 1739
DB 664 www. .... 723
QY 1740 ggaataataatcttcaatacaatacaataaagcgtgaagctcgatcaaggtctta 1799
DB 724 www. .... 783
QY 1800 attagcgc 1808
DB 784 www. .... 792
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RESULT 9
AAF58257
ID AAF58257 standard; DNA; 936 BP.
XX
AC AAF58257;
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XX 24-APR-2001 (first entry)
DT
XX
DE Oligonucleotide D1954.
XX
KM Electron-transfer group; ETM; mismatch; genotyping;
KM gene expression; ss.
XX
OS Synthetic.
XX
PN W0200107665-A2.
XX
PD 01-FEB-2001.
XX
PF 26-JUL-2000; 2000MO-US20476.
XX
PR 26-JUL-1999; 98US-0145695.
PR 17-MAR-2000; 2000US-0190259.
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XX
PA (CLIN-) CLINICAL MICRO SENSORS INC.
XX
PI Umek RM.
XX
DR WPI; 2001-159728/16.
XX
PT Nucleic acids containing electron-transfer group, useful as labels in
PT hybridization assays, e.g. for genotyping, allowing repeat analyses on
PT a single surface.
XX
XX
PS Example 6; Page 127, 159pp; English.
XX
CC The present invention relates to a composition comprising two nucleic
CC acids each containing an electron-transfer group (ETM) having
CC different redox potentials. The invention is used for electronic
CC detection of nucleic acids, especially of substitutions (mismatches)
CC and single-nucleotide polymorphisms, e.g. for genotyping,
CC monitoring gene expression.
XX
SQ Sequence 936 BP; 5 A; 142 C; 7 G; 6 T; 776 other;

Query Match 4.1%; Score 150.6; DB 22; Length 936;
Best local similarity 1.1%; Pred. NO. 1.2e-23;
Matches 9; Conservative 508; Mismatches 272; Indels 0; Gaps 0;

QY 1020 attcgaaataatcagagatataaagtagtagttaaaggtattaaagataaagtgcaa 1079
DB 4 www. .... 63
QY 1080 agaatltaagaagaatgcatctcaacttcaagctcgaatgtagttagtactcaagt 1139
DB 64 www. .... 123
QY 1140 gtttgaactaatgtaacaacaacactctgttaaacttagcagcaggttagtctgacac 1199
DB 124 www. .... 183
QY 1200 tgaagactactlaacagctgatttgaagtgttagacacgtgaacgtc 1259
DB 184 www. .... 243
QY 1260 gaacgtactatctacagatgtgaaactgaaacgactccaglaattgcctactc 1319
DB 244 www. .... 303
QY 1320 tggctacaactactactacgtlaaaagagcgttagtaactggtgaacaataaact 1379
DB 304 www. .... 363
QY 1380 tgcctacaataatgtlaaaacattaaactgtgtacaaagcgtacgaattagtgct 1439
DB 364 www. .... 423
QY 1440 cactgcacaacgacacacacatgctgctacacgtctactacttggtgtgtaaac 1499
DB 424 www. .... 483
QY 1500 ttatctactggtctctctacaaacaaatgttgggtaattggtggtgtgtaatga 1559
DB 484 www. .... 543
QY 1560 agctggaactattatctctgctctcaatctcaacaacgcttgctactaagttaga 1619
DB 544 www. .... 603
QY 1620 actacttagctgataacttgctgtaactgtaaaaagatcgtgtacagcttgctgctc 1679
DB 604 www. .... 663
QY 1680 tgaactaaataatgacagcgtctaaatggtlaacttagtgcacaaagcgtgaactaa 1739
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[illegible]

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XX Example 6; Page 127; 159pp; English.
PS
CC The present invention relates to a composition comprising two nucleic
CC acids each containing an electron-transfer group (ETG) having
CC different redox potentials. The invention is used for electronic
CC detection of nucleic acids, especially of substitutions (mismatches)
CC and single-nucleotide polymorphisms, e.g. for genotyping,
CC monitoring gene expression.
CC
XX Sequence 936 BP; 4 A; 139 C; 10 G; 7 T; 776 other;
SQ

Query Match      4.0%; SCORE 147.2; DB 22; Length 936;
Best Local Similarity 0.6%; Pred. No. 6,5e-23;
Matches 5; Conservative 506; Mismatches 269; Indels 0; Gaps 0;

OY 1024 gaataatagcaggatcaagaagttagttagtaagaattaaagacaaaatgcgaagaa 1083
DB | : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
DB 789 GCATTTTAAAGAGATGCATCACTTCGAAGTCGAAATGTGTAGTACTCAAGTGTT 730
OY 1084 tttaaagaagatgcatctacttcgaagctcgaaatgtcgtagttactcaagtgtt 1143
DB : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
DB 729 TTTTAAAGAGATGCATCACTTCGAAGTCGAAATGTGTAGTACTCAAGTGTT 670
OY 1144 ggaactaatgtacaacaacacctctgtaaactgaagcagcgctacttcgaccctaac 1203
DB : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
DB 669 TTTTAAAGAGATGCATCACTTCGAAGTCGAAATGTGTAGTACTCAAGTGTT 610
OY 1204 gatctttaacagtgtagtatctgatagtgtagttagcacctgaaactgttaacagcgcgaag 1263
DB : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
DB 609 TTTTAAAGAGATGCATCACTTCGAAGTCGAAATGTGTAGTACTCAAGTGTT 550
OY 1264 gttaattacagatgctgtgaagactggaaacgcatccagtaattgcatctacttgtt 1323
DB : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
DB 549 TTTTAAAGAGATGCATCACTTCGAAGTCGAAATGTGTAGTACTCAAGTGTT 490
OY 1324 tctacaattactatcaagctttaaagaagcgttagtaactggttaacacataaacttgtc 1383
DB : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
DB 489 TTTTAAAGAGATGCATCACTTCGAAGTCGAAATGTGTAGTACTCAAGTGTT 430
OY 1384 atcaataatgltaaacacctaactcgtgttacaaatgcagaagcttagcaggttagtgcact 1443
DB : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
DB 429 TTTTAAAGAGATGCATCACTTCGAAGTCGAAATGTGTAGTACTCAAGTGTT 370
OY 1444 gcaaacgcatacgcacccaactgtgtctacacgcctcctactacttagtggtaaccaattta 1503
DB : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
DB 369 TTTTAAAGAGATGCATCACTTCGAAGTCGAAATGTGTAGTACTCAAGTGTT 310
OY 1504 tctactggtctccttacacaacaaatgtttgggtlaaatggtcgtgtgtgtgaatgaagct 1563
DB : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
DB 309 TTTTAAAGAGATGCATCACTTCGAAGTCGAAATGTGTAGTACTCAAGTGTT 250
OY 1564 ggaactttalcccggctccatccacacaaagctttgcactcaagttagaacgaacct 1623
DB : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
DB 249 TTTTAAAGAGATGCATCACTTCGAAGTCGAAATGTGTAGTACTCAAGTGTT 190
OY 1624 acttaagcctgataacttgtagttagttaaagaagatcgtgcacgtgttgctctcgaa 1683
DB : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
DB 189 TTTTAAAGAGATGCATCACTTCGAAGTCGAAATGTGTAGTACTCAAGTGTT 130
OY 1684 cttaaatataatgcagacgctaanaatgltaacttagtgcgaagaagcgagacttaagaa 1743
DB : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
DB 129 TTTTAAAGAGATGCATCACTTCGAAGTCGAAATGTGTAGTACTCAAGTGTT 70
OY 1744 ataacaatcctcaaatacaaatlaaaaaagccttgaaqtcgcgataaagfatgtaatla 1803
DB : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
DB 69 TTTTAAAGAGATGCATCACTTCGAAGTCGAAATGTGTAGTACTCAAGTGTT 10

RESULT 14
AAF58254/C
ID AAF58254 standard; DNA; 936 BP.

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